authorized capital in excess of $2,000,000 may apply for the consent of the Federal Reserve Board that such excess be paid in on call of the board of directors, provided, that in all events 25 per cent of the total authorized capital must be paid in before the corporation commences business.

THE SLIDING SCALE AMENDMENT

Finally, the Act of April 13, 1920, should be mentioned. Subsection (d) of Section 14 of the Federal Reserve Act authorized every Federal Reserve Bank to establish, subject to review and determination by the Federal Reserve Board, rates of discount for each class of paper. The Act of April 13, 1920, added to this section language specifically providing that such rates "may be graduated or progressed on the basis of the amount of the advances and discount accommodations extended by the Federal Reserve Bank to the borrowing bank." The purpose of this amendment was, of course, to give to the Federal Reserve Banks and the Federal Reserve Board clear authority to require member banks habitually borrowing in excess of their legitimate requirements to pay higher discount rates for their excess borrowings.

Preparation for War and the Liberty Loans

By J. HERBERT CASE

Deputy Governor, Federal Reserve Bank of New York

AT the entrance of the United States into the World War in 1917 the readjustment of our credit and financial system to meet the unusual demands of the Public Treasury devolved in a large measure upon the Federal Reserve Banks. The financial activities of the government were soon to be extended upon a scale never before equalled by any country and the financial resources of the country were to be assembled and directed toward one purpose, winning the War. To accomplish this purpose would require highly developed sales organizations which would extend to every county and village in the country, and elaborate machinery for distributing the securities and collecting and disbursing the funds according to the Treasury's needs. More fundamental, however, was the necessity that our banking system should be able to meet the enlarged demands for credit incident to war financing, without unduly curtailing the credit needs of commerce and industry.

PREPARATION FOR WAR BY RESERVE BANKS

The announcement of the entrance of the United States into the War, however, did not find the Federal Reserve Banks wholly unprepared to meet the new responsibilities. Precautions had been taken early in the year to maintain the Federal Reserve Banks in a strong condition with regard for the disturbed conditions of the world and the changing economic conditions in this country. This country, heretofore a debtor country, had become a creditor nation; gold was flowing in, and foreign securities were being marketed here in increased amounts so as better to permit belligerent countries to pay for heavy purchases of goods, purchases so heavy, in

fact, that there had already developed a feverish business activity. A change in affairs was foreseen and heavy credit demands anticipated in the eventuality of either our participation in the War or the conclusion of peace, and the opportunity was taken to fortify and strengthen the position of the Federal Reserve Banks.

Unnecessary expansion of credits was checked and a reduction was effected in the holding of such bonds and warrants as had previously been acquired primarily for the sake of income. The beginning of April, 1917, found the Federal Reserve Banks in a very strong position; the holdings of municipal warrants had been reduced to small proportions, the total earning assets of the Federal Reserve Banks had gradually been reduced from $221,896,000 to $167,994,000 since the beginning of the year and the reserve ratio of the twelve Federal Reserve Banks was about 85 per cent. Moreover, the report of the Comptroller of the Currency and of state banking authorities showed the banks of the country to be in a strong condition.

Impounding Gold

In order that they might be prepared for any emergency, the Federal Reserve Banks, realizing their responsibilities as the guardians of the country's reserves, had adopted the policy of gradually building up their gold holdings in order that they might be used as a basis of credit expansion. There was a demand from the banks and the public for the new clean notes being issued by the Federal Reserve Banks, and the opportunity was taken to exchange these notes for gold and gold certificates. In issuing Federal Reserve notes, however, it was necessary to deposit as collateral with the Federal Reserve agent eligible commercial paper equal to 100 per cent of the notes issued; but in the early days of the System the available volume of eligible paper was limited. Therefore, in order to make the exchange, it was necessary to adopt a circuitous method which may be described as follows: The Federal Reserve Bank of New York, for example, would pledge $100,000 of commercial paper, obtaining in exchange Federal Reserve notes, and would then, as the Act authorized it to do, deposit gold to retire its liability for the notes and withdraw the paper. This operation would be repeated over and over again until enough Federal Reserve notes had been obtained to meet the demands for new currency. Moreover, the gold held as security for notes could not be used except as a 100 per cent fund to provide for their redemption and was held by the Federal Reserve agent specifically for that purpose.

For the purpose of further strengthening the System, the Federal Reserve Board in January, 1917, recommended a number of amendments to the Federal Reserve Act, and they were again transmitted to Congress during April and were adopted on June 21, 1917, substantially as recommended by the Board. One object sought by these amendments was to enable the Federal Reserve Banks more effectively to control the country's gold supply, and therefore the process of issuing notes was simplified by permitting their issuance either against gold or eligible paper, or both, as collateral. The Act as amended not only permitted gold to be pledged directly for notes, but allowed this gold to serve as the reserve required against the notes. The effectiveness of the gold reserves held by the Federal Reserve Banks was greatly increased and the adaptability of the System to the changing requirements of the public enhanced. After the passage of this amendment and our

entrance into the War, as a part of the redoubled efforts to impound the country's gold where it would serve its most useful purposes, both member and non-member banks were repeatedly urged to transfer their gold as it accumulated to the Federal Reserve Banks, and the appeal met with a hearty response.

The provisions concerning member banks reserves were likewise changed, first by reducing their required reserves to 13, 10 and 7 per cent for central reserve city, reserve city and country banks, respectively, and second, by requiring that their entire reserves should be carried as cash balances with the Federal Reserve Banks. These changes both augmented the gold holdings and increased their efficiency with a commensurate increase in the discount power of the Federal Reserve Banks. Member banks could no longer count as a part of their legal reserves, cash in their own vaults, and the privilege of country banks to keep a part of their reserves with reserve city banks was discontinued several months prior to the date originally fixed for such discontinuance. These changes increased the cash holdings of the Federal Reserve Banks by about $250,000,000. At the same time non-member banks were encouraged to deposit their cash reserves with the Federal Reserve Banks and to carry accounts with them for the clearing and collecting of their checks.

The success of the movement to accumulate gold is shown in Table I which gives for three years the country's monetary stock of gold, the gold holdings of the Federal Reserve Banks and the gold in general circulation, *i.e.*, outside the Treasury and the holdings of the Federal Reserve Banks:

TABLE I

TOTAL MONETARY STOCK OF GOLD, GOLD HOLDINGS OF FEDERAL RESERVE BANKS, GOLD IN CIRCULATION, 1917, 1918, 1919

Date	Total monetary stock of gold in the country	Gold held in U. S. Treasury	Gold holdings of Federal Reserve Banks	Gold in Circulation
January 1, 1917.......	$2,864,842,000	$233,945,000	$737,787,000	$1,893,110,000
January 1, 1918.......	3,040,439,000	212,231,000	1,558,116,000	1,270,092,000
January 1, 1919.......	3,080,510,000	327,239,000	1,916,656,000	836,615,000

MOVEMENT FOR A GREATER MEMBERSHIP

As originally provided in the Act, all national banks are necessarily members of the Federal Reserve System but prior to the entrance of the United States into the War, the membership of the Federal Reserve Banks included less than fifty state banks and trust companies, and the combined resources of member banks were approximately one-half of the total banking resources of the country. Obviously this was a weak point in the System. In meeting a great credit strain or unusual financial problems, it was believed that the Federal Reserve Banks would be called upon to support indirectly the non-member banks through credits granted to member banks, which, in turn, would aid the state institutions.

In view of the country's needs and the part played by the Federal Reserve Banks in carrying on the War, it was soon generally recognized that a moral

and patriotic obligation rested upon state bankers to support the system. Immediately following the declaration of war there was a decided movement among the stronger state institutions toward obtaining membership, a movement accompanied by some pressure on the part of the larger member banks which were desirous of being relieved from the duty of financing these non-member institutions in case of emergency. The Federal Reserve Board had adopted a liberal policy in its regulations both as to terms of admission of state banks and as to their rights to withdraw at their discretion, but there existed among these institutions a feeling of uncertainty and a lack of assurance that these rulings would be permanent without legislative sanction. The action of Congress, therefore, in passing the amendment approved June 21, 1917, giving to state institutions the assurance that they might become members of the System and carry on their activities substantially as before and, in addition, giving them the definite right to withdraw from the System on six months' notice, accelerated the movement to obtain membership.

The climax to this movement for a greater membership was a letter from the President on October 13, 1917, to state banks and trust companies, in which he urged a complete mobilization of the banking reserves of the United States in order to meet the great financial requirements imposed upon the country by the War. In this appeal the President said in part: "I believe that coöperation on the part of banks is a patriotic duty at this time, and that membership in the Federal Reserve System is a distinct and significant evidence of patriotism." Under these various incentives and influences many of the stronger state institutions filed applications and were admitted to membership. The progress of the movement towards greater unification of the banking system is shown by the fact that at the end of 1917 the membership of state banks and trust companies had increased to 250 and the Board in its Annual Report for that year estimated that the member banks represented approximately 75 per cent of the commercial banking assets of the country.

The Liberty Loans

While the President and Congress were wrestling with the problem of reorganizing our banking system, it had become generally recognized that the method of handling the government's finances through the Independent Treasury System was antiquated and the framers of the Federal Reserve Act happily inserted a clause authorizing the Secretary of the Treasury to require the Federal Reserve Banks to act as fiscal agents. At the beginning of 1916 the Reserve Banks began to act as fiscal agents of the government, but prior to our entrance into the War, their services had been limited to receiving deposits of receipts from customs and internal revenue and paying checks and warrants drawn by and on the Treasurer of the United States. But when the Treasury was confronted with the problem of raising and disbursing the huge sums necessary to carry on the War, the Reserve Banks became the chief agencies through which it operated; they became the administrative centers of the various Liberty Loan committees in addition to performing the minor fiscal agency functions. Floating the Liberty Loans was the paramount financial undertaking of the War; it was a task, the accomplishment of which necessitated arousing public opinion to a realization of the needs of the government and enlisting the support of every American.

SELLING LIBERTY BONDS

Perhaps I can best explain the methods used in selling government bonds by a brief description of the organization and work of the Liberty Loan committees in the Second District, with which I am most familiar. During the First and Second Liberty Loans, the responsibility for selling bonds in the second district rested largely upon volunteers from the various bond houses, banks and corporations which generously and patriotically contributed the services of their staffs. It was soon seen, however, that one loan was hardly completed before preparations for another one were being made, and it was realized that with each successive loan, as the novelty wore off, a more intensive campaign and more unified organization would be requisite in order to induce the public to do the necessary amount of saving and investing. Consequently a fixed establishment of paid employes was built up.

The central Liberty Loan Committee was the center and directing force around which the whole organization revolved. As finally perfected, it consisted of fifteen members, many of whom were heads of some of the largest banks and banking houses in New York. The chairman of the Committee was the Governor of the Federal Reserve Bank of New York. The Committee met frequently during the progress of the loans and determined the policies to be followed and the nature of the appeals to be made to the public.

One of the members of the Liberty Loan Committee was chairman of the distribution organization which had direct charge of sales and which was made up of bankers or partners in bond houses. The permanent staff of the distribution committee was headed by the director of distribution, who was the executive in charge of the immense and very active bond-selling organization.

This district, with the exception of three boroughs of New York City, was divided into eight subdistricts and a member of the distribution organization was chairman of each subdistrict. These subdistrict chairmen formed the connection between their local Liberty Loan committees and the central organization. They acted as advisers to the local chairmen and transmitted to them the plans and material prepared at headquarters. The number of committees and subcommittees ran into the thousands. In every community an extensive volunteer organization was formed which carried the campaign direct to the individual in every branch of human activity.

To the army of Liberty Loan workers, men and women through whose energy and patriotism the millions of subscriptions were actually obtained, is due a large part of the credit for the complete success of the greatest financial operation of all time.

A publicity organization was established as a necessary part of the selling campaign. Its mission was to carry to every citizen in the district the message of the Liberty Loans and of America. This message was carried in a great variety of ways in the effort to disseminate the ideals for which America entered the War and to point out the financial needs of the government for winning the War. In the newspapers and magazines, on the billboards, houses, lamp-posts, vehicles, flagstaffs, and in the store and householder's window, the appeal appeared, showing the obligation of every American to participate in the work of winning the War. Frequent Liberty Loan meetings were held and many hundred men and women delivered the message in public addresses.

PARTIAL PAYMENTS

One of the most difficult problems from the standpoint of the physical handling of subscriptions in New York City grew out of the enormous number of applications for $50 and $100 bonds from persons who of necessity could purchase only on the partial payment plan.

The fact that there were but a relatively small number of banks located in the metropolitan area to handle the growing volume of these transactions threatened serious congestion in the banks. This situation, however, was successfully met by the formation of the Liberty Loan Association of Banks and Trust Companies of New York, which handled, through a coupon book system, approximately 2,400,000 separate partial payment accounts in connection with the Third, Fourth and Victory Liberty Loans. Under this plan, subscribers were allowed to make payments at any of about 1,400 payment stations designated throughout the metropolitan district as a convenience to subscribers and as a measure of relief to the banks.

The Liberty Loan Association, under the direction of the Federal Reserve Bank of New York, with a staff of approximately 450 clerks operated the system through which over 90,000,000 individual payments were received and over 2,000,000 separate bonds were delivered. As many as 17,500 people called at the office of the Liberty Loan Association at 19 West 44th Street, New York City, during a single day.

The importance of this undertaking is not to be measured merely by the number of bonds distributed. Countless individuals could not have purchased these securities on any other than the instalment plan, and much credit is due the banking institutions and the hundreds of other coöperating agencies that made possible this great undertaking.

HANDLING THE LOANS

Up to the time of the First Liberty Loan, the Federal Reserve Banks had been operating with a comparatively small force of clerks, sufficient only to take care of the comparatively moderate volume of business which the banks had yet been called upon to do. It was not until after the First Liberty Loan campaign was actually under way that the officials in charge of the Federal Reserve Banks began to realize that their forces were totally inadequate to the magnitude of the task for the government which lay before them. The leading banks and investment houses were then appealed to for help and responded most effectively, willingly lending clerks, stenographers and even heads of departments and officers. In the Second District the force so loaned consisted of about 350 men who stayed with the Federal Reserve Bank until they were gradually replaced by a permanent staff just prior to the Second Liberty Loan.

It became necessary to develop special accounting systems, and control records in order properly and successfully to handle the issue, exchange and redemption of billions of dollars in government securities. Three separate departments were created to perform this work. One was organized to handle all operations in connection with the issue of bonds; another, to manage the sale and issue of certificates of indebtedness; and a third, to handle the collateral pledged by banks to secure government deposits. Something of the magnitude of the task performed by the government bond departments of the twelve Federal Reserve Banks may be seen from Table II which gives for the five Liberty Loans the record of subscriptions, allotments, exchanges and conversions.

TABLE II

SUBSCRIPTIONS, ALLOTMENTS, EXCHANGES AND CONVERSIONS FOR THE FIVE LIBERTY LOANS

Loan	Number of subscribers	Amount subscribed	Amount allotted	Number of pieces issued on allotments	Number of temporary bonds exchanged for permanent bonds. (Aug. 31, 1921)	Number of conversions (Aug. 31, 1921)
First........	4,000,000	3,035,226,850	1,989,455,550	7,513,627	1,322,834	3,717,955
Second......	9,400,000	4,617,532,300	3,807,865,000	14,938,073	5,610,948	12,317,448
Third.......	18,308,325	4,176,516,850	4,175,650,050	24,406,982	14,459,383	....
Fourth......	22,777,680	6,993,073,250	6,964,581,250	33,024,445	17,405,606	....
Victory.....	11,803,895	5,249,908,300	4,497,818,750	17,498,172	....	636,960
Total.....	66,289,900	24,072,257,550	21,435,370,550	97,381,299	38,798,771	16,672,363

Other services of magnitude performed by the bond departments of the Federal Reserve Banks were exchanges of bonds of one denomination for bonds of another denomination, payment of coupons from all issues of Liberty Bonds and assistance rendered the Treasury Department in the registering of government bonds by receiving coupon bonds for registration and registered bonds for exchange into coupon bonds.

The current needs of the Treasury between the periods of bond issues and tax receipts were met by frequent issues of certificates of indebtedness of short maturities, which were also handled by the Federal Reserve Bank. These short credits proved to be a popular investment for our banking institutions and were periodically converted into long-time credits through the Liberty Loan bond drive and thus were distributed among individual investors. The issuance of certificates not only supplied a means of securing current funds but afforded a protection to the money market by distributing the receipts from loans and taxes over periods of time, thus avoiding periodic heavy withdrawals of funds from the market. On October 31, 1921 there had been eighty-eight issues of certificates of indebtedness, both loan and tax, aggregating $32,881,000,000 of which $30,235,000,000 had matured and had been redeemed.

PAYMENT BY BOOK CREDIT

In order further to minimize possible disturbances in the money market the Federal Reserve Banks at the request of the Secretary of the Treasury extended to banks the privilege of paying for their subscriptions to Liberty Bonds and certificates of indebtedness by book credit, which simply means creating a deposit in favor of the government to the amount of the subscriptions. These deposits were withdrawn gradually from the banks on a pro rata basis as needed by the government. The Federal Reserve banks as fiscal agents were required not only to keep records of these deposits and withdrawals, but also to receive and hold collateral against them; at times these deposits amounted to about a billion dollars and the Federal Reserve Banks were required to handle many billions of dollars of collateral in connection therewith.

SUBCOMMITTEE ON MONEY

The desirability of having an orderly money market was generally recognized and on September 5, just prior to the offering of the Second Liberty Loan, a subcommittee of the Liberty Loan Committee of the Second District was appointed for the purpose of securing the most complete coöperation with the government in its financial program by all the financial interests of the city. This committee was composed of the Chairman of the Liberty Loan Committee, as chairman, and the presidents of eight of the largest financial institutions.

The policy of this subcommittee on money was to prevent the absorption of an excess amount of credit by the security market which might interfere with the orderly marketing of the government's loans, and at the same time to assure that sufficient funds would be available to maintain a reasonably healthy security market in order to facilitate the successful placing of Treasury issues. It was considered of great importance that reasonable and necessary control be exercised over the employment of credit in order to insure no interference with the financial operations of the government in conducting the war.

This committee enjoyed the fullest coöperation of the governors and members of the New York Stock Exchange who unselfishly placed in the hands of the subcommittee confidential information which would enable the committee to take such steps as were calculated to maintain an orderly money market.

MEETING THE DEMAND FOR CREDIT

The success of the Liberty Loans depended in large measure on the individual banks throughout the country. But the extent of their coöperation in turn depended upon the financial support which they felt they could secure from the Federal Reserve Banks. It soon became evident that the savings of the people in spite of the various thrift campaigns would not prove sufficient to meet the tremendous demands of the government and that a substantial portion of its borrowings would have to be met through bank credit. The banks supplied this credit both by subscribing to the loans themselves and by extending credit freely to their customers who borrowed in order to buy government obligations.

In fact, in order to insure the success of the government's financial measures, banks, life insurance companies, general business corporations and individuals were urged to subscribe heavily to the Liberty Loans without regard to their immediate ability to pay for them. Preferential discount rates were established by the Federal Reserve Banks in favor of paper secured by United States Government obligations and easy terms of payment promised by the individual bank to induce a sufficient flow of funds from the banks and the people to the government. With the coöperation of and by the support they gave to the individual banks of the country, the Federal Reserve Banks expanded the credit structure sufficiently to meet the needs of the great emergency.

The "borrow and buy" method of securing funds leads to inflation, to be sure, with all its consequent ills, but any method of financing a war, except solely out of the savings of the people, would have the same result. War financing always involves credit expansion unless private savings increase commensurate with government requirements. Try as we may, we cannot get away from this fact. We may safely say that the difference between the government's requirements for funds, as expressed in the securities

sold, and the volume paid for out of savings, represents a good part of the recent credit expansion. But it could hardly be expected that private savings would keep pace with the phenomenal demands of the government during the World War. Certainly no opportunity was neglected to impress upon the public the fact that they should save to the limit. While the Federal Reserve Banks were conducting a campaign urging increased borrowing as one means of selling Liberty Bonds, an equally intensive campaign urging upon the people the necessity for thrift and rigid economy was being conducted by the same banks under the direction of the Liberty Loan and War Savings committees, as well as by various other government agencies. The Food Administration, for instance, was active in this regard.

Furthermore, a campaign was carried on under the direction of the Capital Issues Committee for the purpose of conserving capital, labor, materials and transportation facilities for their most effective use in the prosecution of the War. There was a local capital issues committee in each district which reported to the central committee on all applications for permission to issue securities for the purpose of financing public or private corporate expenditure. The Capital Issues Committee of the Second District, although in existence less than a year, considered formal applications for issues amounting to $2,069,000,000, besides numberless cases where no formal applications were filed notwithstanding the fact that when the Committee was first appointed, the submitting of applications covering private issues was largely voluntary.

The record of the Federal Reserve Banks during the War, in my judgment, is one of splendid achievements. They not only organized and directed the sales campaigns and handled the details of every loan, but also by the support given to the individual banks of the country made possible their hearty coöperation and guaranteed the success of every loan. It is a cause for deep gratification that the banks and the people through efficient methods and organization were able to supply the government with such unprecedented sums to meet its needs in carrying on the War. That five great loans, aggregating more than $21,000,000,000, were rapidly and successfully distributed with hardly a ripple in the financial markets, is of itself a great testimonial to the new banking system which has now been thoroughly tried and has successfully met the test.

The Assumption of Treasury Functions by the Federal Reserve Banks

By MURRAY S. WILDMAN
Stanford University

THE Independent Treasury as it functioned for three quarters of a century was an institution unique in the field of public finance. It grew out of the general demoralization of the banks which followed the panic of 1837 and the downfall of the Second Bank of the United States. When the Act of 1841 was passed, followed by the more adequate Act of 1846, the need for such legislation was real and urgent. On the theory that the establishment and